**Chapter 4. Setting the colors for the chart**

For each series, you have many options how to color them:

1. You can provide a unique color for each series
2. You can provide different colors for ascending and descending parts of the data
3. You can provide a specific color for each piece of line (that is, for each of your (x,y) data).
4. You can also design various color schemes and apply different or the same schemes to different charts and switch the color schemes dynamically in your code.
5. You can set any background color of the chart or even place a picture on the chart background.

Now we discuss all of this in detail.

All the colors are set in css file. Now they are stored in fchart.css, but if you wish, you can copy them to your custom css file.

To understand how to change the colors, we need to explain how they are organized in the library.

Each piece of line or point or bar or mark has 3 styles (css class names):

chart-<AXIS\_NAME>-line<SERIES\_NO>

chart-<AXIS\_NAME>-line<SERIES\_NO>-<asc | desc>

chart-<AXIS\_NAME>-line<SERIES\_NO>-id<ID\_NO>

where

<AXIS\_NAME> depends on AxisSystem you used. For example, if you used the first AxisSystem, which includes one bottom axis and one left axis, its name will be:

**bottom0-left0**

<SERIES\_NO> is the sequential number of the series within specific AxisSystem starting with 0.

<ID\_NO> is the sequential number of the piece of line (point, bar, area) within a series, starting with 1.

*EXAMPLE:*

Suppose the first series is ascending on the first 3 points and descending on the next 2 points.

In this case their first 5 points will have css styles (css class names) as follows:

1: chart-bottom0-left0-line0 chart-bottom0-left0-line0-asc chart-bottom0-left0-line0-id1

2: chart-bottom0-left0-line0 chart-bottom0-left0-line0-asc chart-bottom0-left0-line0-id2

3: chart-bottom0-left0-line0 chart-bottom0-left0-line0-asc chart-bottom0-left0-line0-id3

4: chart-bottom0-left0-line0 chart-bottom0-left0-line0-desc chart-bottom0-left0-line0-id4

5: chart-bottom0-left0-line0 chart-bottom0-left0-line0-desc chart-bottom0-left0-line0-id5

The first style is the same within the same series, the second style is different only depending on whether it is ascending or descending part of the curve, the third style is constantly changed.

The colors are set by assigning colors to both properties: fill and stroke.

The colors can be set by name (for example, blue), or by rgb number (for example, #000080).

*EXAMPLE:*

. chart-bottom0-left0-line0 { fill:blue; stroke: blue;}

Note: it is important to set both ***fill*** and ***stroke*** to the same color in each css definition!

1. **a single color for each series**

You define only the first style:

. chart-bottom0-left0-line0 { fill: #000080; stroke: #000080;}

and remove any definitions like

. chart-bottom0-left0-line0-asc

. chart-bottom0-left0-line0-desc

. chart-bottom0-left0-line0-id<ID\_NO>

The same for other series:

. chart-bottom0-left0-line1 { fill:red; stroke:red;} //for series 2

. chart-bottom0-left0-line2 { fill:green; stroke:green;} //for series 3

And so on.

1. **different colors for ascending and descending parts of the data**

Suppose the ascending part of series 1 must be red and the descending part of series 1 must be blue.

You need to define 2 styles in the css file:

. chart-bottom0-left0-line0-asc { fill:red; style: red}

. chart-bottom0-left0-line0-desc {fill:blue; style:blue}

Suppose the ascending part of series 3 must be green and the descending part of series 3 must be yellow.

You need to define additionally 2 styles in the css file:

. chart-bottom0-left0-line2-asc { fill:green; style: green}

. chart-bottom0-left0-line0-desc {fill:yellow; style:yellow}

1. **a specific color for each piece of line (that is, for each of your (x,y) data).**

Suppose for series 1 you need to set the color of the first piece of line (first point, first bar, first part of area) to #000080, second to #008000, third to #800000, fourth to #777777, fifth to #c0b3f3, you need to add 5 definitions to your css file as follows:

. chart-bottom0-left0-line0-id1 { fill:#000080; style: #000080}

. chart-bottom0-left0-line0-id2 { fill:#008000; style: #008000}

. chart-bottom0-left0-line0-id3 { fill:# 800000; style: #800000}

. chart-bottom0-left0-line0-id4 { fill:#777777; style: #777777}

. chart-bottom0-left0-line0-id5 { fill:#c0b3f3; style: #c0b3f3}

1. ***You can also design various color schemes and apply different or the same schemes to different charts and switch the color schemes dynamically in your code.***

It is easy, just we use the power of css styles: we assign css class names to our charts (we can define in css our color schemes).

*Example*

Let us give names to the color schemes we created above as follows:

UniqueColorsBlueRedGreen

AscendingDescendingBlueRedAndGreenYellow

SpecificColorForEachPointScheme1

In our css file we put the entries as follows:

. UniqueColorsBlueRedGreen . chart-bottom0-left0-line0

{ fill: #000080; stroke: #000080;}

. UniqueColorsBlueRedGreen . chart-bottom0-left0-line1 { fill:red; stroke:red;} //for series 2

. UniqueColorsBlueRedGreen . chart-bottom0-left0-line2 { fill:green; stroke:green;} //for series 3

. AscendingDescendingBlueRedAndGreenYellow . chart-bottom0-left0-line0-asc { fill:red; style: red}

. AscendingDescendingBlueRedAndGreenYellow . chart-bottom0-left0-line0-desc {fill:blue; style:blue}

. AscendingDescendingBlueRedAndGreenYellow . chart-bottom0-left0-line0-asc { fill:red; style: red}

. AscendingDescendingBlueRedAndGreenYellow . chart-bottom0-left0-line0-desc {fill:blue; style:blue}

.SpecificColorForEachPointScheme1 . chart-bottom0-left0-line0-id1 { fill:#000080; style: #000080}

.SpecificColorForEachPointScheme1 . chart-bottom0-left0-line0-id2 { fill:#008000; style: #008000}

.SpecificColorForEachPointScheme1 . chart-bottom0-left0-line0-id3 { fill:# 800000; style: #800000}

.SpecificColorForEachPointScheme1 . chart-bottom0-left0-line0-id4 { fill:#777777; style: #777777}

.SpecificColorForEachPointScheme1 . chart-bottom0-left0-line0-id5 { fill:#c0b3f3; style: #c0b3f3}

Now we created 3 color schemes.

In our code we can easily change color schemes of our charts.

For example, in the beginning our chart1 has UniqueColorsBlueRedGreen color scheme, and chart2 has SpecificColorForEachPointScheme1 color scheme, in some time we change the color scheme or chart1 to AscendingDescendingBlueRedAndGreenYellow.

Code:

Chart chart1 = new Chart();

chart1.addStyleName(“UniqueColorsBlueRedGreen”);

Chart chart2 = new Chart();

chart2.addStyleName(“SpecificColorForEachPointScheme1”);

Later, when we need to change the color scheme, we execute the code as follows:

chart1.removeStyleName(“UniqueColorsBlueRedGreen”);

chart1.addStyleName(“AscendingDescendingBlueRedAndGreenYellow”);

1. **You can set any background color of the chart or even place a picture on the chart background.**

For example, if you need a white background, in your css file you can write as follows:

. UniqueColorsBlueRedGreen

{

background: white

}

If you need a picture on the background, in your css file you can write as follows:

. UniqueColorsBlueRedGreen

{

background: url(picture\_url);

}

Provided that you added the style name to the chart as . UniqueColorsBlueRedGreen.

Also if you need a white background for all charts, you can use an already defined class name:

.v-chart

{

background: white;

}

In our standard fchart.css there are 2 ready predefined color schemes:

* UniqueColorsBlueGreenRedScheme: defines unique colors for each series:

Series 1: blue

Series 2: green

Series 3: red

Series 4: yellow

Series 5: rgb(192,192,192) (gray)

Series 6: orange

* AscendingDescendingRedBlueYellowGreenScheme: defines different colors for ascending and descending parts of each series (ASC – ascending, DESC – descending):

Series 1: red (ASC) and blue (DESC)

Series 2: yellow (ASC) and green (DESC)

Series 3: brown (ASC) and orange (DESC)

Series 4: rgb(192,192,192) (gray) (ASC) and green (DESC)

In the next chapter you can learn how to place any drawings or text to the chart (or even without a chart, just to the chart place) and directly execute commands of very powerful d3 library.